

IN THE CLAIMS

Add new Claims 12-14.

1. (previously amended) A method for error detection and correction (EDC) in transferring data in a packet of bytes from a memory module to a requesting device comprising the steps of:

defining each byte of the packet to have an EDC code portion and a data portion, wherein each EDC code portion is a distributed portion of a complete EDC code;

storing said data portion and said EDC code portion of each byte of the packet in the memory module;

reading out said data portion and said EDC code portion of each byte of the packet from said memory module;

forwarding said data portion of each byte of the packet read from the memory module to said requesting device;

storing said EDC portion of each byte of the packet read from the memory module, and sending each said EDC portion to an EDC functional block when the complete EDC code is obtained;

copying said data portion of each byte of the packet read from the memory module, and sending each said data portion to said EDC functional block; and

performing error checking and correction in said EDC functional block when said EDC functional block receives the complete EDC code.

2. (previously amended) A method as in claim 1,

further comprising the following steps when an error is detected in said EDC functional block:

- setting a flag and correcting said data;
- writing the correct data back to said memory module; and
- generating an interrupt to said requesting device for a later retransmission.

3. (original) A method as in claim 1, wherein each byte of a packet has 8 bits of data and 1 bit of a 8 bit EDC code and said EDC code is distributed among 8 bytes of each packet.

4. (original) A method as in claim 1, wherein said forwarding of said data portion will not begin until an entire packet is received and said entire packet is checked and corrected for error.

5. (withdrawn) A method for error detection and correction (EDC) comprising:

- generating a complete EDC code in response to a data packet;
- distributing the complete EDC code among the data packet to create a plurality of bytes, each including a data portion from the data packet and an EDC code portion from the complete EDC code;
- storing the bytes in a memory module;
- retrieving the bytes from the memory module;
- forwarding the data portions of the bytes retrieved from the memory module to a requesting device;
- providing the data portions of the bytes retrieved

from the memory module to an EDC functional block;  
providing the EDC code portions of the bytes  
retrieved from the memory module to the EDC functional  
block; and

performing error checking and correction in the  
EDC functional block upon receiving the complete EDC  
code from the provided EDC code portions.

6. (withdrawn) The method of Claim 5, further  
comprising generating syndrome bits in response to the data  
portions provided to the EDC functional block.

7. (withdrawn) The method of Claim 5, wherein the  
step of forwarding the data portions is performed in  
parallel with the steps of: providing the data portions to  
the EDC functional block, providing the EDC code portions to  
the EDC functional block, and performing error checking and  
correction in the EDC functional block.

8. (withdrawn) The method of Claim 7, further  
comprising performing the following steps if the EDC  
functional block detects an error:

correcting the data portions of the bytes  
retrieved from the memory module;

writing the corrected data portions to the memory  
module; and

generating an interrupt to the requesting device  
to arrange for a data retransmission.

9. (withdrawn) The method of Claim 5, further  
comprising storing the EDC code portions of the bytes  
retrieved from the memory module to create the complete EDC

code.

10. (withdrawn) The method of Claim 5, further comprising only forwarding the data portions of the bytes retrieved from the memory module to the requesting device if the EDC functional block determines there are no errors in the data portions retrieved from the memory module.

11. (withdrawn) The method of Claim 10, further comprising performing the following steps if the EDC functional block determines there is an error in the data portions retrieved from the memory module:

correcting the data portions of the bytes retrieved from the memory module, thereby creating corrected data portions; and then,

forwarding the corrected data portions to the requesting device; and

writing the corrected data portions to the memory module.

12. (new) A method as in claim 1, wherein said forwarding of said data portion is performed in parallel with said performing error checking and correction in said EDC functional block.

13. (new) A method as in claim 12, further comprising transmitting an interrupt to the requesting device if an error is detected in said EDC functional block, wherein the interrupt is transmitted after forwarding said data portion of each byte of the packet read from the memory module to said requesting device.

14. (new) A method comprising:

- receiving a plurality of data bytes on a system bus;
- encoding an error detection and correction (EDC) code in response to the data bytes received on the system bus;
- distributing the EDC code among the data bytes;
- storing the data bytes and the EDC code in a memory module;
- reading the data bytes and the EDC code from the memory module;
- transmitting the data bytes read from the memory module to the system bus, and in parallel, performing an error detection and correction operation in response to the data bytes and the EDC code read from the memory module; and
- generating an interrupt on the system bus after transmitting the data bytes read from the memory module if an error is detected by the error detection and correction operation.